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September 16, 1981

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MIDLAND PROJECT

DOCKET NOS 50-329, 50-330

PERMANENT PLANT DEWATERING WELL INSTALLATION

FILE 0485.16 UFI 71*01, 00234(S) SERIAL 13774

REFERENCES: (1) JWCOOK LETTER TO HRDENTON SERIAL 11625 DATED MARCH 23, 1981
(2) JWCOOK LETTER TO HRDENTON, SERIAL 11818 DATED APRIL 3, 1981
(3) RLTEDESCO LETTER TO JWCOOK DATED APRIL 10, 1981
(4) JWCOOK LETTER TO HRDENTON, SERIAL 11818A DATED APRIL 24, 1981
(5) RLTEDESCO LETTER TO JWCOOK, DATED MAY 28, 1981
(6) JWCOOK LETTER TO HRDENTON, SERIAL 12225 DATED MAY 28, 1981
(7) JWCOOK LETTER TO HRDENTON, SERIAL 12243 DATED JUNE 8, 1981
(8) RLTEDESCO LETTER TO JWCOOK DATED JUNE 18, 1981.
(9) JWCOOK LETTER TO HRDENTON, SERIAL 13407 DATED AUGUST 10, 1981
(10) RLTEDESCO LETTER TO JWCOOK DATED SEPTEMBER 2, 1981

ENCLOSURES: (1) TABLE 1 - PERMANENT DEWATERING WELL SCHEDULE
(2) FIGURE 1 - PERMANENT DEWATERING AND MONITORING WELL LOCATION PLAN

We believe it is essential at this time that we proceed with the installation of the remaining 44 permanent dewatering wells which are identified in the enclosed twenty-five (25) copies of Table 1 and Figure 1. We are writing to explain the necessity for well installation and testing in advance of the schedule indicated in Attachment 1 to our March 23, 1981 correspondence, (Reference 1) and to request NRC staff concurrence to allow us to proceed with the installation of the remaining permanent dewatering wells.

In our previous correspondence of April 3 and 24, 1981, May 28, 1981, June 8, 1981, and August 10, 1981 (Reference 2, 4, 6, 7, and 9, respectively) we forwarded complete technical details on the design, installation and testing of 20 permanent backup interceptor wells along with the quality assurance requirements applicable to these activities. We have also resolved NRC concerns and recommendations on this technical and quality assurance information. We have reviewed the draft Corps of Engineers letter of April 16, 1981, the deposition of J Kane, notes of the meeting with the staff on May 7, 1981 regarding responses to the 50.54(f) Questions 42(a), 47, 49, 50, 51, 52 and 53, and the concerns and recommendations identified in the NRC's correspondence of April 10 and May 28, 1981 (References 3 and 5). Most

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concerns have already been resolved in discussions with the staff regarding installation of the 20 backup interceptor wells which is detailed in Section 10 of Specification C-88(Q). These concerns included gravel pack material, gradation of foundation materials, soil particle monitoring, incremental withdrawal of casing during gravel pack and grout placement, advancement of hole below casing, and recordkeeping during well installation and development. The staff's concurrence on the installation of these 20 backup interceptor wells was contained in two letters dated June 18 and September 2, 1981 (References 8 and 10). Based on our responses to these staff concerns we are not aware of additional staff concerns that would preclude our proceeding with the installation of the remaining permanent dewatering wells.

The remaining 44 permanent dewatering wells, consisting of 24 area wells and 20 interceptor wells, will be installed in the locations shown on the enclosed Figure 1 and to the depths listed in Table 1. Figure 1 and Table 1 are updates of the 50.54(f) Figure 47-11 and Table 47-2, respectively. It is important to note that Specification C-118(Q) for the installation of these remaining wells has been prepared based on the technical requirements given in response to 50.54(f) Question 47-4 and on modifications to reflect the comments provided by the staff regarding Section 10 of C-88(Q) for the permanent backup interceptor wells. Therefore, Specification C-118(Q) is technically equivalent to Specification C-88(Q), Section 10, which has already been reviewed by the staff. The well design is the same as that provided in response to Question 47-4, except that: (1) grout is now specified for the surface seal; (2) the surface seal is a minimum of 18 feet thick; (3) minimum hole size is 16 inches; and (4) 87% of the filter pack is permitted to be retained on the Number 40 sieve. The interceptor and backup interceptor well locations have been modified primarily in the service water pump structure area to accommodate the planned underpinning which was presented to the staff in a meeting on May 7, 1981, and to take advantage of the thick sequence of natural sand found further from the building which was mentioned in our telecommunications of June 17, 1981 with the staff. The locations of the area wells have been modified only slightly to avoid underground utilities and to accommodate the aforementioned changes near the service water pump structure. Also the location of Monitoring Well 4 and area Well B-2 have been interchanged as shown on Figure 1. The revised elevations corresponding to these changes for top of screen, bottom of screen and bottom of filter pack are indicated in Table 1. Moreover the same quality assurance program will be applied to this work as is being applied to the installation of the 20 backup interceptor wells. The Specification C-118 along with the quality program requirements applicable to this work will be made available at the site for the NRC's review.

Also identified on Figure 1 are the intended locations of well pilot holes for boring samples. Pilot holes will be drilled at permanent well locations that are not near one of the following: 1) a previously drilled permanent dewatering boring (PD-Series); 2) an existing pilot hole; or 3) a planned pilot hole. Sand samples from the pilot holes will be tested for gradation to verify the gravel pack design.

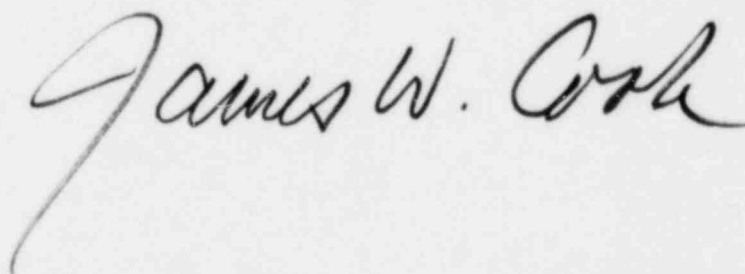
Because preparatory work on underpinning of the auxiliary building is currently scheduled to begin in January 1982, we wish to complete the installation of the remaining 44 permanent dewatering wells prior to this date

so that the maximum benefit will be derived from these permanent wells. We have already started pilot hole drilling for the remaining 44 permanent wells during the week of September 8, 1981, and we anticipate starting the remaining well drilling in October. At our current rate of production, completion of the permanent wells, including development and testing, can be accomplished before the start of the auxiliary building underpinning provided that we proceed immediately. Although installation of the permanent wells could be accomplished during the auxiliary building underpinning, well development and testing could not be performed. This is due to the expectation that the temporary construction dewatering system will lower site water levels below that necessary to perform proper well development and testing. Because it is not prudent to install wells that will not be developed or tested until a much later date, it becomes essential that we proceed with the start of this work so that the completion of the permanent dewatering system will not have to be delayed until after underpinning which is scheduled for completion in 1983.

In addition, based on a review our commitments in the 50.54(f) responses, we have concluded that proceeding at this is required to allow us to establish our monitoring procedures, test criteria, maintenance plans, etc, for plant operation based on the experience gained with the remaining permanent wells during the latter stages of plant construction as well as during their use to support the temporary dewatering required for the auxiliary building underpinning construction.

We anticipate that the start of well drilling in October 1981 will coincide with the beginning of the recharge test for the initial 20 backup interceptor wells already in progress. Well drilling could begin on any of the 44 remaining permanent wells because the water table elevation has no bearing on the drilling operation. Although water is added during the drilling process to prevent hole instability and to facilitate removal of drill cuttings, the quantity of water lost is very small. The permeability of the clay is 0.04 ft/day and the permeability of the sand is 3.5 ft/day; please refer to our 50.54(f) response to Question 47-2. Because the subcontractor will not be permitted to drill the hole below the bottom of the casing when penetrating sand, the cross sectional area available for seepage will be a maximum of only 1.8 square feet based on an 18-inch hole size. In fact, no seepage losses have been observed during the current well drilling program. Because groundwater is removed during development and testing, this phase of the work will not begin until after the recharge test is completed.

We believe that the previous information supplied to the staff on both the technical and quality program aspects of the dewatering well design, installation and testing combined with the further information contained in this correspondence should be sufficient to obtain the NRC staff's concurrence with our request to proceed with the installation of the remaining 44 dewatering wells.



JWC/RLT/cr

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TABLE 1
PERMANENT DEWATERING WELL SCHEDULE⁽¹⁾

<u>Well Number</u>	<u>El. Top of Screen (ft.)</u>	<u>El. Bottom of Screen (ft.)</u>	<u>El. Bottom of Filter Pack (ft)⁽²⁾</u>
<u>Interceptor Wells</u>			
C-1	602	587	582
C-2	598	588	583
C-3	599	589	584
C-4	600	590	585
C-5	602	592	587
D-1	586	565	560
D-2	589	565	560
D-3	589	565	560
D-4	590	565	560
D-5	588	570	565
D-6	587	575	570
D-7	587	579	574
E-1	600	590	585
E-2	600	585	580
E-3	600	580	580
E-4	600	580	580
E-5	600	580	580
E-6	600	580	580
E-7	600	580	575
E-8	600	590	585
E-9	600	590	585
<u>Back-up Interceptor Wells</u>			
F-1	586	565	560
F-2	589	565	560
F-3	589	565	560
F-4	590	565	560
F-5	588	570	565
F-6	587	575	570
F-7	587	579	574
G-1	602	578	573
G-2	602	575	570
G-3	602	575	570
G-4	600	572	567
G-5	600	570	565
G-6	600	575	570
G-7	597	587	577
G-8	587	573	568
G-9	585	574	569

TABLE 1 (Continued)

PERMANENT DEWATERING WELL SCHEDULE⁽¹⁾

<u>Well Number</u>	<u>El. Top of Screen (ft.)</u>	<u>El. Bottom of Screen (ft.)</u>	<u>El. Bottom of Filter Pack (ft.)⁽²⁾</u>
<u>Back-up Interceptor Wells (continued)</u>			
H-1	601	585	580
H-2	600	587	582
H-3	601	595	580
H-4	603	597	582
<u>Area Wells</u>			
A-1	600	580	575
A-2	600	575	570
A-3	600	575	570
A-4	600	580	575
A-5	594	576	571
B-1	600	585	575
B-2	600	590	575
B-3	600	590	575
B-4	603.5	590	575
B-5	600	590	580
J-1	600	575	570
J-2	595	575	570
J-3	600	575	570
M-1	600	575	570
M-2	580	565	560
M-3	590	575	570
M-4	600	575	570
M-5	595	575	570
N-1	600	575	570
N-2	600	575	570
N-3	590	575	570
N-4	600	575	570
N-5	600	575	570
N-6	585	570	565

(1) Final elevations may vary depending on actual field conditions and results of pilot holes.

(2) Elevation at bottom of filter-pack is the elevation of bottom of the hole.

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